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A-S

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/040,825	03/18/98	FRYBERG M	ICH275

025230
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IM71/0112

EXAMINER	
YAMNITZKY, M	
ART UNIT	**PAPER NUMBER**
1774	17

DATE MAILED: 01/12/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
09/040,825	Mario FRYBERG et al.
Examiner	**Group Art Unit**
M. Yamnitzky	1774

☒ Responsive to communication(s) filed on *Nov 6, 2000* .

☒ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire *three (3)* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) *3-13* is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *3-13* is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐approved ☐disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____ .

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____ .

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

1. This Office action is in response to applicants' amendment received 11/06/00 (Paper No. 15) which amends claim 12 and adds claim 13.

Claims 3-13 are pending.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. The three rejections under 35 U.S.C. 103(a) using the Smigo patent as the primary reference (i.e. the rejections based on the Smigo patent alone, in view of Oliver et al., and in view of Kobayashi et al.) are overcome by applicants' amendment. Although Smigo et al. suggest that additives such as starch, carboxy methyl cellulose, polyvinyl alcohol and polyacrylic emulsions may be used in conjunction with a polyvinyl alcohol/vinyl amine copolymer, Smigo et al. do not expressly limit the relative amounts of these additives and the copolymer.

3. Claims 3-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Independent claims 12 and 13 do not specify whether the "10 to 75%" is a percent by weight, a percent by volume, or has some other basis, thus rendering the claims indefinite. (Based on the examples, support is provided for amending claims 12 and 13 to specify that the claimed

range is a range of "weight" percents. The endpoints of the range as a range of weight percents are supported by Sample numbers 17 and 33 in the specification as originally filed.)

The molecular weight limitation renders claim 5 indefinite because it is not specified how the molecular weight is determined (e.g. is the molecular weight a number average molecular weight or a weight average molecular weight?).

4. Applicants' arguments filed 11/06/00 regarding the molecular weight limitation of claim 5 have been fully considered but they are not persuasive.

Applicants submit a reference showing that weight average molecular weight is determined by light scattering, and state that they have determined the weight average molecular weight of the copolymers used in the invention by light scattering. However, applicants have not amended claim 5 to specify that the molecular weight required by the claim is a "weight average" molecular weight, nor have applicants indicated any portion of the original disclosure that states that the molecular weight of the polymers was determined as a weight average molecular weight and/or that the molecular weight was determined by light scattering.

5. Claims 3-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kono et al. (4,801,497) or Kashiwazaki et al. (5,747,146), either of these patents taken in view of Smigo et al. (5,281,307), for the reasons set forth in Paper No. 14 in the rejection of claims 3-12, and for the additional reasons set forth below.

Independent claim 12 has been amended to require that the quantity of copolymer be between 10 to 75% of the combined amount of copolymer and binder.

New independent claim 13 contains the same limitations of claim 12, and also requires that the binder comprise gelatin.

Regarding claim 13's requirement for a binder comprising gelatin, both the Kono patent and the Kashiwazaki patent disclose gelatin. For example, see column 7, line 38 of the Kono patent and see column 5, line 45 of the Kashiwazaki patent.

Regarding the requirement for an amount of copolymer between 10 to 75% of the combined amount of copolymer and binder (interpreted by the examiner as a percent based on weight since that is what is supported by the examples of the original disclosure), both the Kono patent and the Kashiwazaki patent disclose amounts of cationically modified polyvinyl alcohol (hereinafter "catPVA") within the required range.

For example, Kono et al. teach that the amount of Polymer-A should be in the range of 1 part by weight to 33 parts by weight based on 100 parts by weight of catPVA (see col. 6, lines 16-35). This equates to an amount of catPVA of about 99 to about 75% by weight based on the combined weight of catPVA and Polymer-A (e.g. in a composition containing 33 parts by weight Polymer-A and 100 parts by weight catPVA, the composition contains about 75 percent by weight catPVA based on the combined weight of catPVA and Polymer-A). An amount of 75% by weight is within the range required by the present claims. Further, Kono et al. teach that other polymers may be used in combination with the catPVA and Polymer-A, with the weight of

catPVA plus Polymer-A to the weight of other polymers being in the range of 20:1 to 1:20, preferably 15:1 to 1:10 (see col. 7, lines 35-53). Thus, the use of other polymers results in other amounts of catPVA within the range required by the present claims (e.g., in a composition containing 33 parts by weight Polymer-A and 100 parts by weight catPVA, and a 20:1 ratio of catPVA and Polymer-A to other polymer, the composition contains about 71% by weight catPVA based on the combined weight of catPVA, Polymer-A and other polymer).

Kashiwazaki et al. teach that the amount of aqueous resin emulsions (in terms of solids) is within a range of 0.1 to 50% by weight, preferably 1 to 30% by weight, based on the content of catPVA (see col. 7, lines 61-65). This equates to an amount of catPVA of about 99.9 to about 67% by weight based on the combined weight of catPVA and aqueous resin emulsion (solids content). Amounts in the range of 75 to about 67% by weight are within the range required by the present claims. Kashiwazaki et al. also teach that other cationic polymers may be added (see col. 8, l. 66 to c. 9, l. 17). Inclusion of any the other cationic polymers will lead to lower amounts of catPVA relative to the total weight of catPVA, solids of the aqueous resin emulsion, and other cationic polymer. Some of the examples in the Kashiwazaki patent also utilize amounts of catPVA within the scope of the presently claimed range: Example 12 (col. 16) uses 71% catPVA, Example 31 (col. 19) uses 50% catPVA, and Example 31 (col. 19) uses 25% catPVA.

6. Applicants' arguments filed 11/06/00 (with reference to arguments in previously filed amendments) have been fully considered but they are not persuasive. Applicants' arguments

regarding the 103(a) rejection of claims as unpatentable over Kono et al. or Kashiwazaki et al., either taken in view of Smigo et al., were initially set forth in the amendment filed 11/09/99 (Paper No. 7).

Applicants argue that the amount of copolymer in the coating layer of the present invention is much less than the amount of catPVA used in the Kono patent while providing improved light fastness. While the presently required range encompasses relative amounts of catPVA that are less than some of the amounts taught in the Kono patent, Kono et al. do teach relative amounts of catPVA within the required range. The examples of the present specification demonstrate that greater relative amounts of copolymer (which is a cationic polyvinyl alcohol copolymer) result in improved light fastness, and there is no criticality demonstrated for the presently claimed upper limit of 75% copolymer.

With respect to applicants' argument in Paper No. 7 that the examiner acknowledged that Kono et al. do not use the copolymer required by the present claims, the examiner again notes that she acknowledged only that Kono et al. do not explicitly disclose the required copolymer. As previously noted on the record, the copolymer required by the present claims is clearly within the scope of the Kono patent's cationically modified polyvinyl alcohol.

Applicants argue that the Kashiwazaki patent does not mention that catPVA increases light fastness. This argument is not persuasive because although Kashiwazaki does not mention this property, sufficient motivation exists to combine the teachings of the primary and secondary

references, and increased light fastness would be an inherent result of the combination. Further, the present claims place no specific limitation on the lightfastness of the claimed recording sheet.

Applicants also argue that the Kashiwazaki patent uses a supplemental binder in an amount of 0.1 to 30% by weight based on the content of catPVA (the patent actually teaches "0.1 to 50% by weight, more preferably from 1 to 30% by weight"). While the presently required range encompasses relative amounts of catPVA that are less than some of the amounts taught in the Kashiwazaki patent, Kashiwazaki et al. do teach relative amounts of catPVA within the required range and disclose specific examples having relative amounts of catPVA within the required range. The examples of the present specification demonstrate that greater relative amounts of copolymer (which is a cationic polyvinyl alcohol copolymer) result in improved light fastness, and there is no criticality demonstrated for the presently claimed upper limit of 75% copolymer.

Lastly, applicants argue that the cited art does not suggest the desirability of modifying the recording sheets of the Kono or Kashiwazaki patents to incorporate the copolymer of the Smigo patent. The examiner respectfully disagrees. The Kono and Kashiwazaki patents require the use of cationic polyvinyl alcohol in a recording sheet. The Smigo patent discloses copolymers that are cationic polyvinyl alcohols and teaches using these copolymers to coat paper and paper-type products in order to provide improvements in properties such as dry strength, wet strength and fold resistance. One of ordinary skill in the art would have been motivated to use Smigo's copolymers as the catPVA required by the Kono or Kashiwazaki patents in order to provide the

improved properties taught by Smigo et al. since these improved properties would be beneficial in a recording medium for ink jet printing.

7. Miscellaneous: In the second line after the formula in claims 12 and 13, "R + H" should read --R = H--.

8. Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication should be directed to Marie R. Yamnitzky at telephone number (703) 308-4413. The examiner can generally be reached at this number from 6:45 a.m. to 3:15 p.m. Monday-Friday.

The current fax numbers for Art Unit 1774 are (703) 305-3599 for official after final faxes and (703) 305-5408 for all other official faxes. (Unofficial faxes for Art Unit 1774 can be sent to (703) 305-5436.)

Marie R. Yamnitzky

MRY
01/12/01

MARIE YAMNITZKY
PRIMARY EXAMINER
1774